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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,499	03/29/2001	Seong R. Yu	AUS920010195U1 (9000/36)	5098
7590 06/10/2005			EXAMINER	
Frank C. Nicholas CARDINAL LAW GROUP 1603 Orrington Avenue, Suite 2000 Evanston, IL 60201			STEELMAN, MARY J	
			ART UNIT	PAPER NUMBER
			2191	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/820,499

Applicant(s)

YU, SEONG R.

Examiner

Mary J. Steelman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

PD

### DETAILED ACTION

1. This Office Action is in response to Remarks 2 March 2005. Claims 1-20 are pending.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,317,509 to Caldwell., in view of US Patent 6,430,553 B1 to Ferret.

Per claim 1, 9, and 15:

-receiving an input stream of characters; (FIG. 2(a). Col. 1, lines 52-55, "...system and method for tokenizing a source program written in a programming language that is represented by both single byte [and] two byte values.", col. 2, lines 1-2, "...a sequence of characters is entered into the compiled lexical analyzer...", col. 3, lines 30-31, "A lexical analyzer is the first phase of compiler. Its main task is to read the input characters from the source program...", col. 5, lines 1-2, "...the source program which consists of a sequence of characters is entered into lexical analyzer...")

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-returning a token upon detecting the delimiter. (See FIG 3, "Print Token", Col. 5, lines 64-65, "...the token representation of the lexeme "HERE" would be sent to the parser (return a token)")

Caldwell disclosed "detecting a delimiter in the input stream...the delimiter being...a single character delimiter..."

(See FIG. 6. Col. 2, lines 6-10, "...lexical analyzer which easily recognizes a heterogeneous input stream of single and two byte characters.", col. 4, lines 26-28, "Patterns or sequences of characters are specified by a regular expression.", col. 4, lines 35-39, "FSA's are usually designed to analyze (recognize) strings from a particular programming language (detecting a delimiter in the input stream). The sentences would be broken down into tokens by the FSA and used as an input into parser.", col. 6, lines 17-20, "The present invention provides a system and method for factoring regular expressions containing two byte characters (multi-character delimiter) into regular expressions containing single byte characters (single character delimiter).")

Caldwell did suggest a delimiter, either single character or multi-character. Col. 1, lines 60-64, "The present invention also includes factoring means for factoring a regular expression, if the regular expression contains at least one (or more characters / multi-characters) two byte character (multiple bytes)..." Also, col. 2, lines 1-5, "Subsequently, a sequence of characters is entered into the compiled lexical analyzer and the characters are checked in relation to the factored regular expression (possibility of a multiple character set matching a regular expression) to construct a set of tokens. The fact is that Connors invention will, given input source characters,

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convert a single character or a multi character delimiter to a regular expression containing only a single byte character (col. 1, line 64). Caldwell failed to explicitly disclose “the delimiter being selected from the group consisting of a single character delimiter and a multi-character delimiter...”

However, Ferret disclosed a method and apparatus for parsing data and suggested (col. 7, line 65-col. 8, lines7), “Command: Extract field (variant 1). Arguments: string delimiter and field number. The engine extracts the string that starts at the current position and ends at the beginning of the delimiter; the delimiter can be a single character, or a character string (a single character delimiter and a multi-character delimiter). The extracted string is stored in the item's field identified by the field number argument; if the field already contains a value, the extracted string either replaces it or extends it. After completion of the extraction operation, the current position becomes the end of the delimiter string.”

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to modify Caldwell's invention to include ‘multi-character delimiters as disclosed by Ferret because both references relate to parsing and lexical analyzing. Caldwell disclosed (col. 1, lines 17-21), “The identification of words and delimiters is a necessary task for any language processing task. The main task of a lexical analyzer is to read input characters from a source program and produce as an output a sequence of tokens. This process is also called “tokenization” because the process generates word and punctuation tokens.” Caldwell's

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invention provides a computer-based system and method for tokenizing a source program written in a programming language.

Per claim 2:

-reading the input stream one character at a time. (Col. 3, lines 31-32, "...read the input characters from the source program...", col. 3, lines 38-39, "...lexical analyzer reads input characters until it can identify the next token.", col. 5, lines 1-10, "...sequence of characters is entered into lexical analyzer...", col. 5, lines 57-61, (See FIG. 3) "...if lexical analyzer moves from state S to state C in response to the letter "H" it will remain in a halt state C via transition line for letters "E, "R", and "E"... Lexical analyzer reads one character at a time until a delimiter (blank space) is encountered.)

Per claim 3, 10, and 16:

-forming the token by appending to a string at least one of the input stream characters preceding the delimiter. (Col. 3, lines 36-39, "Upon receiving a "get next token" command from the parser, the lexical analyzer reads input characters until it can identify the next token", col. 5, lines 57-65, "...if the lexical analyzer moves from state S to state C in response to the letter "H" it will remain in halt state C via transition line for letters "E", "R", and "E". It then will encounter a blank (delimiter) in the input string, thus the lexical analyzer would halt, and print "HERE" (token formed of characters preceding the delimiter). Once the lexical analyzer exits halt state C the token representation of the lexeme "HERE" would be sent to the parser.")

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Per claims 4, 11, and 17:

-detecting a delimiter-token; (FIG. 3. Col. 5, lines 4-7, "When it recognizes a set of input character matching one of the regular expressions in the input specification it executes the corresponding associated action." (detect a delimiter-token and form a lexeme / token), col. 5, lines 64-65, "Once the lexical analyzer exits halt state C the token representation of the lexeme "HERE" would be sent to the parser. (delimiter / blank space encountered, therefore lexeme / token formed and sent to parser).)

-returning the token upon detecting the delimiter token. (Col. 3, lines 32-33, "...produce as an output a sequence of tokens...", col. 3, lines 45-46, "The token sequence emitted by lexical analyzer...", col. 5, lines 9-10, "Typically the output from lexical analyzer is a set of tokens." Also see FIG. 3, upon detecting a delimiter, lexical analyzer exits the halt state and sends the preceding lexeme to parser.)

Per claim 5:

-returning the delimiter-token. (See FIG. 3, "PRINT 'A SPACE'".)

Per claims 6, 12, and 18:

-wherein the delimiter-token is returned on a subsequent call to a lexical analyzer. (See FIG. 3, "PRINT 'A SPACE'". A space is printed every time the finite state machine detects a delimiter and produces the preceding lexeme.)

Per claims 7, 13, and 19:

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-comparing at least one of the input stream characters to a single character delimiter table and a multiple character delimiter table. (Col. 6 , lines 2-3, "...checks to see if it is a legal character.", col. 6, lines 7-8, "...may need to look up a combination of single byte and two byte characters...", col. 8, lines 21-22, "...standard construction of a transition table...", col. 8, lines 40-47, "...checks every character in the input string to determine whether its two byte representation falls between the valid range...then a state transition is made...", col. 9, lines 35-37, "Consequently, since the Kanji (multi-byte) characters can now be represented with single bytes, the transition table only needs 257 columns. (transition table is used for single character and multiple characters))

Per claim 8, 14, and 20:

-for use in migrating pre-existing software code from a first version to a second version of a predetermined language. (Col. 2, lines 59-60, "Compiler is configured to transform a source program into optimized executable code...", col. 3, lines 28-29, "...source program is entered into the system and optimized object code is produced..." Compilers transform a program from one form to another.)

### ***Response to Arguments***

4. Applicant has argued, in substance, the following:

(A) As Applicant has pointed out on page 6, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs, of Remarks, "Caldwell teaches away from claims 1-20, in particular "the delimiter being selected from the group consisting of a single character delimiter and a multi-character delimiter" as recited in independent claims 1, 9, and 15"



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Examiner's Response:

Examiner disagrees. See rejections of claims 1, 9, and 15 above.

Caldwell did suggest a delimiter, either single character or multi-character. Col. 1, lines 60-64, "The present invention also includes factoring means for factoring a regular expression, if the regular expression contains at least one (or more characters / multi-characters) two byte character (multiple bytes)..." Also, col. 2, lines 1-5, "Subsequently, a sequence of characters is entered into the compiled lexical analyzer and the characters are checked in relation to the factored regular expression (possibility of a multiple character set matching a regular expression) to construct a set of tokens. The fact is that Connors invention will, given input source characters, convert a single character or a multi character delimiter to a regular expression containing only a single byte character (col. 1, line 64). Caldwell failed to explicitly disclose "the delimiter being selected from the group consisting of a single character delimiter and a multi-character delimiter..."

However, Ferret disclosed a method and apparatus for parsing data and suggested (col. 7, line 65-col. 8, lines7), "Command: Extract field (variant 1). Arguments: string delimiter and field number. The engine extracts the string that starts at the current position and ends at the beginning of the delimiter; the delimiter can be a single character, or a character string (a single character delimiter and a multi-character delimiter). The extracted string is stored in the item's field identified by the field number argument; if the field already contains a value, the extracted string either replaces it or extends it. After completion of the extraction operation, the current position becomes the end of the delimiter string."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to modify Caldwell's invention to include 'multi-character delimiters as disclosed by Ferret because both references relate to parsing and lexical analyzing. Caldwell disclosed (col. 1, lines 17-21), "The identification of words and delimiters is a necessary task for any language processing task. The main task of a lexical analyzer is to read input characters from a source program and produce as an output a sequence of tokens. This process is also called "tokenization" because the process generates word and punctuation tokens." Caldwell's invention provides a computer-based system and method for tokenizing a source program written in a programming language.

Additionally, a 'multi character delimiter' is well known in the art. As an example"

C://first\_directory/second\_directory Many years ago, Examiner's class assignment was to traverse a pathname string backwards, until reaching the multi character delimiter ://, whereby the root directory could be changed to another suitable character. This knowledge is known in the art and would be obvious.

Examiner maintains the rejections of claims 1-20.

### ***Conclusion***

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Note: "Steer clear of JAVA pitfalls", September 2000, by Michael C. Daconta. Article discloses a technique to manage a three character delimiter.

"StringDelimiter.java", 1998, by Jerry Smith. Article discloses a technique to manage multicharacter delimiters.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan

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Q. Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

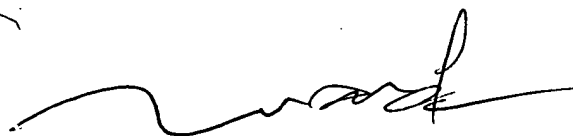
Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman



05/19/2005



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SUPERVISORY PATENT EXAMINER